

Paradigms, by their very nature, impose constraints on and help to define innovation

Indecision is the key to flexibility

In this essay I violate my one topic per essay paradigm; instead, I share three mini-reflections



I was beginning to feel a bit uncomfortable, inappropriately constrained. Since the beginning of May I have worked within a self-imposed paradigm where twice a month I shared a self-contained, focused, typically two-page discussion on one topic related to the epistemology of innovation – something you might print two-sided and carry with you to read when you had a spare moment.ⁱ Since I plan to issue this essay and one more before taking a break to enjoy the Christmas holiday and re-populate the pipeline of essays, and since I already have the next essay planned and drafted, I thought it appropriate to practice what I preach and violate my paradigm in order to best address the reality of the situation. Today I instead share three mini-reflections.

On decisiveness and flexibility

Have you ever thought about the tension between (1) holding fast to what you have in hand and (2) flexibility? What are the benefits and drawbacks of each? Are there situations where they can be reconciled?

Reflect on this in light of the examples of paradigms discussed in the last essay. Those who held fast to the peeling-their-own-carrots paradigm, the feminine-hygiene-pad-as-a-diaper paradigm, or the straddle-high-jump paradigm were portrayed in that essay as eaking out the last measure of value from those paradigms while being constrained by them – unable to move beyond them. In contrast, those who created pre-peeled carrots, feminine hygiene pads designed with a garment in mind, and the ‘Fosbury Flop’ were portrayed in that essay as being willing to release their grip on the current paradigm and move forward into realms of greater opportunity – indecision (that is, not decisively holding on to the existing paradigm) was their key to flexibility. I argued on behalf of breaking paradigms as a model of breakthrough innovation.

In response to that essay, Al Barshefsky shared a marvelous story of a respected friend and Bell Labs colleague that brought this to life for me:

“Pat Matzdorf was, as I remember the story, the last person to claim the world record in the high jump that didn’t use the Fosbury Flop.”ⁱⁱ

Yet, chasing new paradigms is not always or necessarily the best path. What of those who pursue new paradigms that never materialize? John Troeppen offered this story of Ed Land of Polaroid in a recent email exchange:

“Ed Land designed, built, and marketed a self-developing movie film that was technically remarkable. This was at the time of early consumer video and did not provide a return on his investment. All of the technical details were correct, except for the market.”

So, when are we too flexible or not flexible enough? With the case for flexibility made in the prior essay, here I’d like to argue very briefly on behalf of holding fast to what you have. Perhaps most important is that we only come to know by embracing some number or range of constraints or commitments. Without a shared language, we cannot communicate. Without specializing, we don’t plumb the depths we otherwise might. By analogy, without string, a kite cannot fly. Augustine summarized this powerfully with, “do not seek to understand in order to believe, but believe that you may understand.”ⁱⁱⁱ This is a strikingly non-Enlightenment perspective and likely related to the idea that knowing a fact is often understood at Justified True Belief.

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So, when do we hold fast to a paradigm and when do we abandon it? Not to be evasive, but, without doubt, it requires discernment. My heuristic on this is to reflect on the extent to which the paradigm is essential to success, with essential paradigms held more closely than those that merely enhance. While not raised to address this issue, I particularly like how the following insight applies to breakthrough innovation, “In essentials unity, in nonessentials liberty, and in all things charity.”^{iv} ➤

In defense of memorization

Memorization is something of a 'red-headed stepchild' in innovation circles when it comes to discussion about knowledge and knowing. We reward, and strive to enhance, creativity, curiosity and connectivity. Yet, we are modest – at best – when it comes to memorization.

This is by no means a new phenomenon, driven by a culture that carries an attitude that, "if I need it, I can find it on Google." Neither is it limited to innovation.

When the first hand-held calculators hit the market in the early 1970s many of the memorized heuristics grasped by engineering practitioners to estimate, approximate and calculate were lost. And, as so beautifully discussed by Catherine Robson in a very recent Chronicle of Higher Education article, even the thought of memorizing a poem is increasingly at risk, along with the associated loss of its power to, among other things, bring the poem to life and enable the one memorizing it to hold and reflect on it in a meaningful, powerful way over time.^v

We all too often demean so-called mindless rote memorization, delegating it to technology, while elevating creative thinking – yet, they are complementary and both are critical. I first became aware of what I see as this false dichotomy well over a dozen years ago, as the argument raged among fellow parents regarding the best approach to educate their children.

Let's not forget – or, dare I say, let's memorize – that raw, readily-accessible information is not the same as that which is grasped, held closely, and intimately possessed as one's own. In other words, memorization enables creativity in many situations.

Architecting for innovation

In a recent email exchange with Ton Jörg, an educational scientist at the University of Utrecht, I learned of his collaboration with architect Stephanie Akkaoui Hughes of AKKA Architects as they explore how to most effectively architect for the complex dynamics of innovation.^{vi} Only days later, my son shared some photos he found on the web of an Amazon.com distribution center.^{vii} Talk about differences – one in search of value by attempting to facilitate the creation of unexpected knowledge in their operations, with the other in search of value by optimizing

and ensuring the expected in their operations. And, yet, the similarities – both are grounded in the commitment that architecture or layout enable or enhance success.

So, where am I going with this?

Without question, I see value in architecture that enables and enhances the generation of innovative insight through interaction. However, I also am aware that many of the most productive breakthrough innovators in industry have succeeded in spite of such design. So, while not the cynical or naive act of giving employees beanbag chairs and foosball tables as a means to gin up a 'creative environment', architectural solutions are typically not the place to start.

Do your innovators and aspiring innovators exhibit at least some degree of self-motivation, characterized by curiosity, memory, skill at connecting the dots and creativity, and the perseverance of one with the vision to deliver? Does your organizational culture at least not seek to drive out innovation? Is your executive management taking at least some steps to develop personal insight and discernment in matters related to innovation and its associated reward and risk? If so, take that valuable step to architect for innovation. If not, take care that you are not deceiving yourself. ■

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ⁱ In what colleague and Industrial Design Professor Deana McDonagh refers to as the time it takes to drink half a cup of tea.

ⁱⁱ <http://sportsillustrated.cnn.com/vault/article/magazine/MAG1085746/1/index.htm>

ⁱⁱⁱ From Augustine's *Tractate 29 on John 7:14-18* in his *Tractates on the Gospel of John*.

^{iv} Attributed to early 17th century German Lutheran theologian Rupertus Meldenius.

^v http://chronicle.com/article/Why-Memorize-a-Poem-/135878/?cid=at&utm_source=at&utm_medium=en

^{vi} Ton and Stephanie will present on this at the upcoming 5th *European Conference on Intellectual Capital* next April in Bilbao, Spain.

^{vii} <http://imgur.com/a/q1WIO>

'On the Epistemology of Innovation: How Breakthrough Innovators Connect the Dots' is a series of brief, occasional essays addressed to executives, managers, and technologists responsible for innovation in industry. Its purpose is to challenge readers to reflect broadly and deeply on the practice of innovation – in particular on how innovators come to know what to do today – in order to succeed commercially in the future. Essays are available without charge at the University of Illinois' digital archive at <https://www.ideals.illinois.edu/handle/2142/27667>. The discussion group at <http://epistemology-of-innovation.com> is a place to provide feedback and dialog with the author and others regarding these essays, as well as to register to receive notice of new essays as they are issued.